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DRAFT
FEDERAL ON-SCENE COORDINATOR'S REPORT FOR
THE WINDHAM ALLOYS SITE
WINDHAM, PORTAGE COUNTY, OHIO
SITE ID: B5E5
TDD: S05-0003-011
PAN: 0M1101RAXX
START DOCUMENT CONTROL NUMBER:

ecology and environment, inc.
International Specialists in the Environment

DRAFT 12/15/00

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December 15, 2000

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency Response Branch
77 West Jackson Boulevard
Chicago, Illinois 60604

Prepared by: Kelly A Smith Date: 12-15-00
Kelly A. Smith, START Project Manager

Approved by: Anne A. Busher Date: 12.15.00
Anne A. Busher, START Assistant Program Manager

ecology and environment, inc.
6777 ENGLE ROAD, CLEVELAND, OHIO 44130, TEL. (216) 243-3330
International Specialists in the Environment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

Date: December 15, 2000

SUBJECT: ON-SCENE COORDINATOR REPORT- Windham Alloys Site, Windham, Portage County, Ohio, Site ID# B5E5

FROM: Richard Karl, Chief
Emergency Response Branch, SE-5J

TO: Paul Nadeau, Director
R5-R7 Accelerated Response Center, 5201-G

THROUGH: William E. Muro, Director
Superfund Division, S-6J

Attached is the United States Environmental Protection Agency (U.S. EPA) On-Scene Coordinator's (OSC) Report for the Windham Alloys (WA) Site, Windham, Portage County, Ohio. This report follows the format outlined in the National Contingency Plan, Section 300.165. The removal action was initiated on March 13, 1999, and was completed on June 29, 1999. The OSC for this site was Mark Durno.

The WA an immediate threat to public health, welfare, and the environment. The action was taken to mitigate threats posed by buried waste contaminated with lead and chromium.

Costs under control of OSCs are estimated as $_____, of which $_____ was for the Response Cleanup Contractor. Additional costs incurred by state and local agencies are not included in these costs.

Any indication in this OSC Report of specific costs incurred at the site is only an approximation, subject to audit and final definitization by U.S. EPA. The OSC report is not a final reconciliation of the costs associated with a particular site.

Portions of the OSC Report Appendices may contain confidential business or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

The WA site is a nationally significant site, but is not on the National Priorities List.

Attachment

cc:

bcc:

DRAFT
FEDERAL ON-SCENE COORDINATOR'S REPORT

WINDHAM ALLOYS SITE
WINDHAM, POTAGE COUNTY, OHIO

NPL STATUS: NON-NPL

Removal Dates: 3/13/00 - 6/29/00

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

Emergency Response Branch
Superfund Division
Region 5

EXECUTIVE SUMMARY OF REMOVAL ACTIVITY

SITE: Windham Alloys Site

LOCATION: Windham, Portage County, Ohio

PROJECT DATES: 3/13/00-6/29/00

INCIDENT DESCRIPTION: The Windham Alloys (WA) site, not listed on the National Priorities List, consists of a consists of an unfenced parcel of land located to the immediate north of the former WA manufacturing facility. The WA site is bordered to south by the former WA manufacturing facility and State Route 303, to the west and east by unnamed drainage ditches, and to the north by wetlands and undeveloped land. The area of concern at the site is the unfenced northern portion of the site where waste materials were reported to have been illegally disposed. Other site features include two site drainage ditches (site ditches) that originate at the northern end of the manufacturing facility and interconnect with the eastern unnamed drainage ditch at the northern end of the site.

ACTIONS: The Emergency Response Section 1 of U.S. EPA Region 5 initiated a removal action at the WA site on March 13, 2000. The Superfund Technical Assessment and Response Team (START) contractor Ecology and Environment, Inc., (E & E) and the Emergency Rapid Response Services (ERRS) contractor, Earth Tech, Inc., (ET) were mobilized to site on March 20, 2000.

The following removal activities were performed at the WA site: 1) U.S. EPA and ERRS/START contractor personnel were mobilized; 2) the command post area was established; 3) impacted areas were excavated; 4) run-off water which came in contact with the waste was collected and transported off-site for disposal; 5) excavated waste was treated on-site and transported off-site for final disposal; 6) a one foot clay was constructed over the excavated area; and 7) the excavated area was backfilled and returned to grade. U.S. EPA activities at the site were completed on June 29, 2000.

Under EQM's Delivery Order number 68-5S-9802-0036, the following waste was treated, discharged, or disposed: 317, 100 gallons of non-hazardous water was transported off site and recovery at Envirite of Ohio, Inc., located in Canton, Ohio; and 3,385 tons of non-hazardous soil was transported off site to Mills Services, Inc., located in Bulger, Pennsylvania to be utilized as landfill cap material.

Mark Durno
U.S. EPA, Region 5
Westlake, Ohio

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Emergency Response Branch
Office of Superfund, U.S. EPA, Region 5

OSC REPORT STANDARD APPENDICES LIST*

Site Name: Windham Alloys Site, Windham, Portage County, Ohio

Site ID #: B5E5 Delivery Order #: 68-5S-9802-0036

1. OPERATIONAL FILES	ID#
- Action Memos/ Additional Funding Requests/ Time Exemptions	1-A
- POLREPs	1-B
- Site Entry/Exit Log	1-C
- Hot Zone Entry/Exit Log	1-D
- Site Safety Plan	1-E
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- Delivery Order/Procurement Requests/Modifications to Contract (ERRS)	2-A
- Technical Direction Documents/Modifications (START)	2-B
- Daily Cost Reporting U.S. EPA Form 1900-55s (ERRS)	2-C
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- Analytical Results	3-B
- Manifest	3-C
- Disposal Information	3-D
- Vat and Tank Logs	3-E
- Drum Logs	3-F
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- Waste Profile Sheets	3-I

* Portions of these OSC Reports Appendices contain confidential business information or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

* Note that certain files for this site are maintained elsewhere by the Emergency Response Branch. These appendices are those files maintained by the OSC during the removal action.

I. SUMMARY OF EVENTS

A. Site Conditions and Background

1. Initial situation

The WA site is located at 9215 Center Street (State Route 303) in Windham, Portage County, Ohio (Figure 1). The geographical coordinates for the site are latitude 41^{0}14.1'48"N and longitude 81^{0}3.5'45"W. The WA site consists of an unfenced parcel of land located to the immediate north of the former WA manufacturing facility. The WA site is bordered to south by the former WA manufacturing facility and State Route 303, to the west and east by unnamed drainage ditches, and to the north by wetlands and undeveloped land (Figure 2). The area of concern at the site is the unfenced northern portion of the site where waste materials were reported to have been illegally disposed. Other site features include two site drainage ditches (site ditches) that originate at the northern end of the manufacturing facility and interconnect with the eastern unnamed drainage ditch at the northern end of the site. In addition, the WA site is located approximately 400 feet to the west of the public drinking water well field that is used by the Village of Windham.

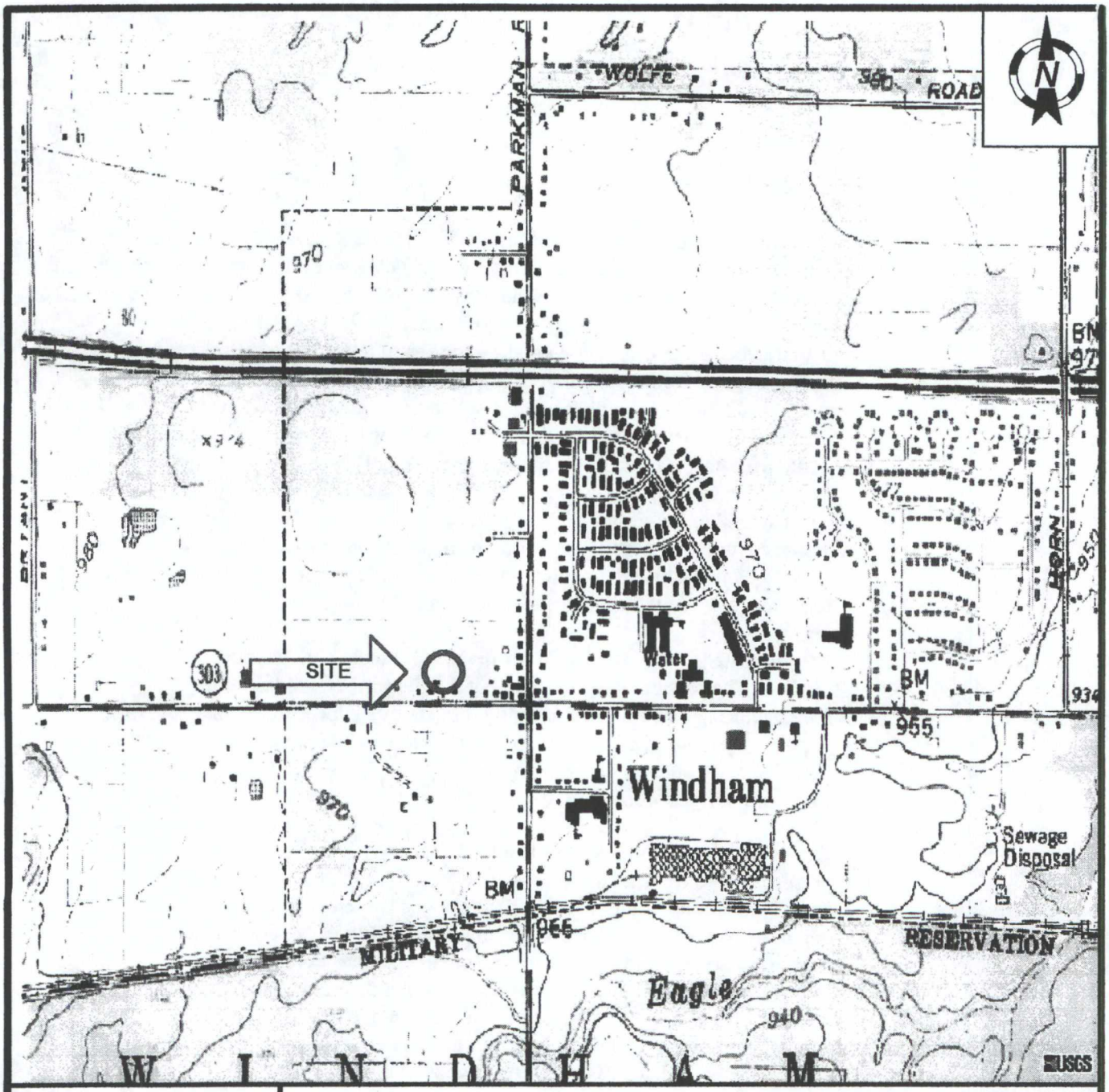
The WA site is the location of a former metal molding and manufacturing facility. The portion of the site that housed the former molding and manufacturing operations is currently for sale by the property owner. A small business currently rents and occupies one of the on-site buildings.

2. Location of hazardous substance(s)

Analytical results obtained by Ohio EPA and START have indicated the presence of TCLP lead and chromium within the soil and sediment at the WA site. In addition, during the Ohio EPA site assessment and associated exploratory test trenching activities, approximately one hundred 5-gallon waste containers and a few 55-gallon waste containers were excavated. The containers were found to be in poor condition and releasing their contents into the soil. Based on the Ohio EPA work and from the results of the START geophysical survey, several buried waste containers are known to exist throughout the site. The buried hazardous waste poses a continued threat of release to soil and groundwater.

3. Cause of the release or discharge

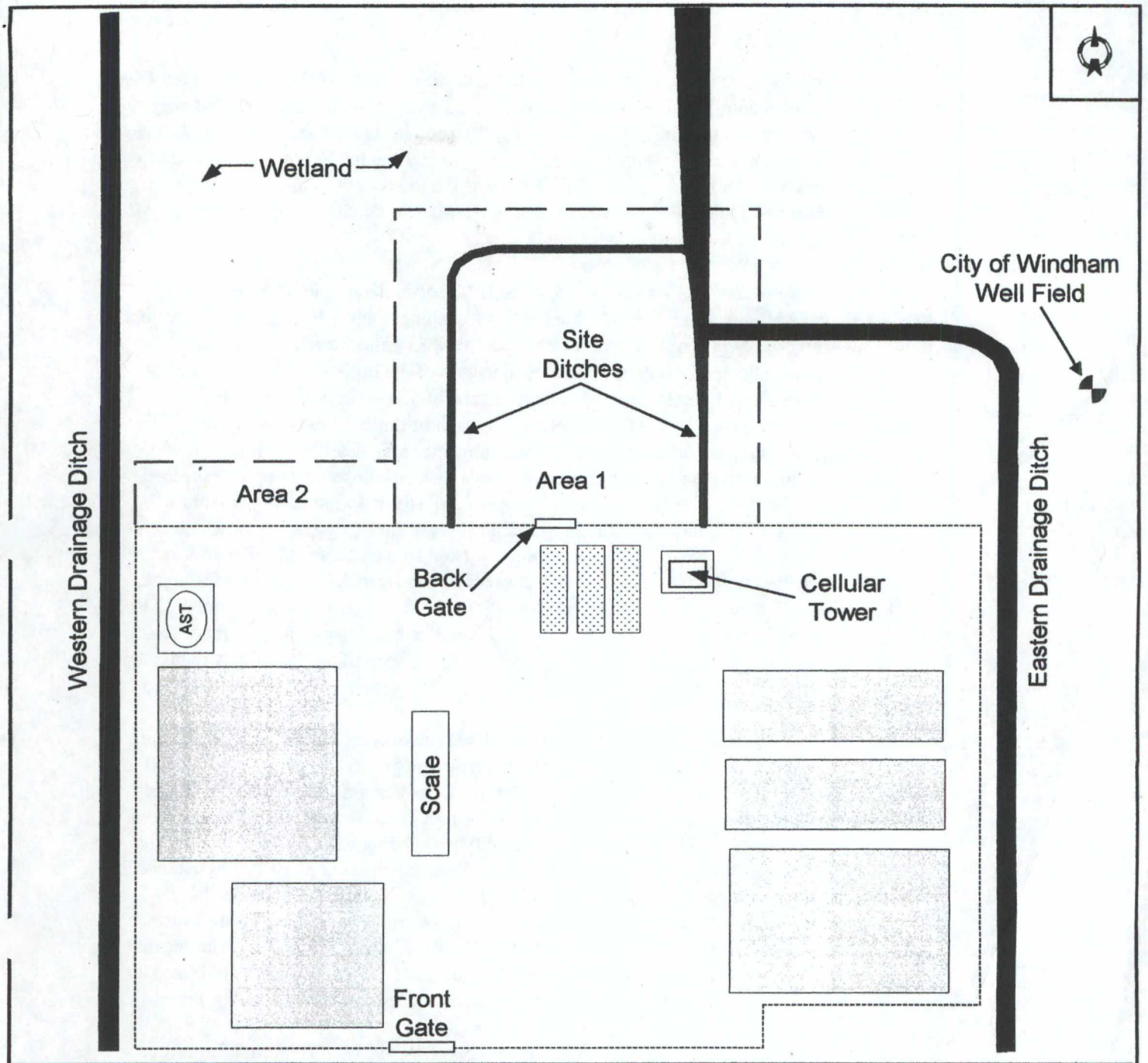
In 1995, the Ohio Environmental Protection Agency (Ohio EPA) began investigating the site as a result of anonymous referrals of illegal waste handling activities being conducted at the site. A company named Extrusions and Alloys, Inc., operated their business at the property under a lease agreement with the property owner, Mr. Tony Rubino. In 1996, after inspecting the facility, Ohio EPA noted no violations at the site.



Quadrangle Location

Ecology and Environment, Inc.
Region 5 - Superfund Technical Assessment and Response Team
6777 Engle Road, Suite N
Middleburg Heights, Ohio 44130

TITLE:	Site Location Map	FIGURE:	1
SITE:	Windham Alloys Site	SCALE:	1:24,000
CITY:	Windham STATE: Ohio	TDD:	S05-0003-011
SOURCE:	USGS Topographic Map 7.5' Series Delorme Ohio Topoquads Software	Date:	2000



Legend

- Tractor Trailers
- Manufacturing Buildings
- Site Fencing
- Site Assessment Boundary

Ecology and Environment, Inc.
Superfund Technical Assessement and Response Team
Region 5
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE	Site Features Map	FIGURE	2
SITE	Windham Alloys Site	TDD	S05-0003-011
CITY	Windham STATE Ohio	SCALE	Not to Scale
SOURCE	Ecology and Environment, Inc.	DATE	1999

In March of 1998, continued reports of illegal dumping at the site prompted Ohio EPA to continue their investigation. The suspected waste materials that were illegally dumped included lead dross, a by product of lead smelting and chromic acid, which was used to clean metal prior to melting it. Following a request to conduct a site assessment, Ohio EPA was denied access to the property by Mr. Rubino. Ohio EPA then obtained a court order to conduct a site assessment of the site.

On November 24 and 25, 1998, Ohio EPA conducted exploratory test trench excavations at the site. During the test trenching, Ohio EPA excavated over one hundred 5-gallon waste containers and a few 55-gallon waste containers. Ohio EPA collected 21 samples from the contents of the buried waste containers. Seventeen of the 21 samples were analyzed by the toxicity characteristic leaching procedure (TCLP) method. In each of those 17 samples, lead, chromium, and/or another hazardous substance was detected. More significantly, lead and/or chromium levels in 15 of those 17 samples exceeded the Resource Conservation and Recovery Act (RCRA) regulatory limits for TCLP lead and chromium of 5.0 milligrams per liter (mg/L), above which solid waste is determined to be a hazardous waste. In particular, TCLP lead was detected in 9 of the 17 samples at levels ranging from 4,300 mg/L to 2.6 mg/L, with 7 samples having levels exceeding the RCRA regulatory limit; and TCLP chromium was detected in 11 of the 17 samples at levels of ranging from 1,400 mg/L to 1.2 mg/L, with 9 samples having levels exceeding the RCRA regulatory limit.

On December 15, 1998, Ohio EPA ordered the property owner, Mr. Rubino, to remove the buried hazardous materials from the ground. Mr. Rubino replied to Ohio EPA's order and indicated that he was not responsible for the waste and that the management of Extrusions and Alloys, Inc., should be further investigated. The Ohio EPA is currently proceeding with its on-going criminal investigation. On April 28, 1999, Ohio EPA requested U.S. EPA's assistance in pursuing a clean-up of the Windham Alloys site. Ohio EPA believes that anywhere from 700 to 2,700 containers were buried close to the ground surface. Of further concern are the City of Windham's drinking water well field, located within 400 feet of the buried waste. On August 5, 1999, U.S. EPA obtained an administrative warrant to conduct site assessment activities at the WA site.

From August 31, 1999, through September 2, 1999, U.S. EPA and Superfund Technical Assessment and Response Team (START) members conducted a site assessment at the WA site. A geophysical survey was conducted over the potentially impacted area (approximately 45,150 square feet). In addition, START collected six surficial soil samples and six sediment samples from random locations. Sample analysis indicated that elevated and hazardous levels of lead and chromium were present in soil and sediment near the waste disposal area.

4. Efforts to locate and obtain response by responsible parties

No financially viable PRP was found that was willing to undertake a full cleanup.

B. Organization of the Response

Removal activities at the WA site were initiated by the U.S. EPA on March 13, 2000. The lead OSC for the removal action was Mark Durno. Ecology and Environment (E & E), Inc., START members were at the site for the duration of the project. Table 1 outlines the agencies and/or parties which responded to the WA site, and the action(s) each took or the role(s) each served.

Table 1

ORGANIZATION OF RESPONSE
WINDHAM ALLOYS SITE
WINDHAM, POTAGE COUNTY, OHIO

Agencies or Parties Involved	Contact	Description of Participation
U.S. EPA - Region 5 Emergency Response Branch 25089 Center Ridge Road Westlake, Ohio 44145 (440)250-1700	Mark Durno	Federal OSC responsible for overall response oversight and success.
Earth Tech, Inc. 2161 New Markey Parkway Suite 262 Marietta, Georgia 30067 (419)427-1529	Tom Rinebolt Brent Vanness Michael Atkins	Provided personnel and equipment necessary for removal and conducted the cleanup. Coordinated shipment and disposal of materials.
Ecology & Environment, Inc. 6777 Engle Road, Suite N Middleburg Heights, Ohio 44130 (440)243-3330	Kelly A. Smith Drew Pearce	Provided OSC with technical assistance, administrative support, sampling, photo and sit documentation, site safety, and draft report preparation.

C. Injury or Possible Injury to Natural Resources

1. Content and time of notification to natural resource trustees

No formal notification has been issued to the Ohio Department of Natural Resources or other organizations regarding the status of possible natural resource damage at the WA site.

2. Trustee damage assessment and restoration activities

No damage assessment or restoration work was necessary at the WA site.

D. Chronological Narrative of Removal Activities

1. Threat abatement actions taken

Response activities were conducted under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104(a). On _____, William E. Muno, Regional Administrator, Office of Superfund, U.S. EPA Region 5, authorized funding to mitigate the imminent and substantial threats to human health and the environment present at the WA site. An action memorandum was approved on _____, with authorized expenditures of up to $_____ to mitigate threats to human health and the environment posed by the buried waste. Delivery Order (DO) number _____ for $_____, was issued to the Region 5 ERRS contractor, Earth Tech (ET) on _____.

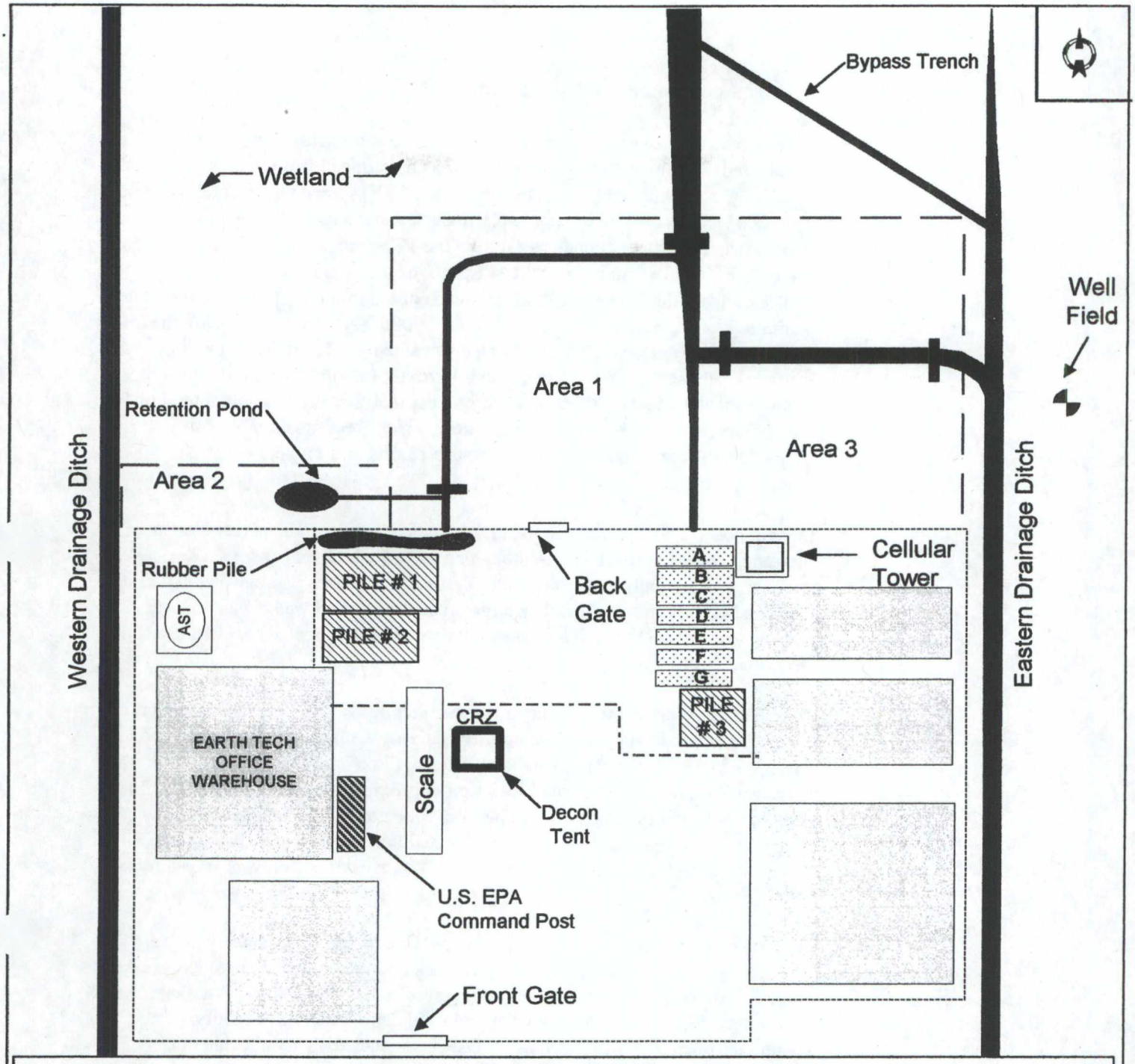
The following discussion is divided into a series of sections and subsections, each of which corresponds to a major activity conducted during the removal. With certain exceptions, the information is presented in chronological order.

1.1 Mobilization and site setup

On March 13, 2000, OSC Durno, RM Reinbolt, and START conducted a site walk to discuss site setup and schedule of removal activities.

On March 20, 2000, ERRS contractor, ET, mobilized personnel and equipment to the WA site to begin removal activities. From March 20, 2000, through March 24, 2000, ERRS began site set up including establishing the command post, site control zones, decontamination tent, and staging areas. In addition, ERRS initiated coordination of transportation and disposal, finalized the site health and safety plan, and procured a laboratory.

On March 21, 2000, START conducted a survey of the tentative excavation area to determine elevations. A 5 ft by 50 ft grid was laid out and the elevation was measured at each intersection. Refer to Figure 3 for site layout map.



Legend

- 20,000 GallonTank
- Manufacturing Buildings
- Site Fencing
- Exclusion Zone
- Contamination Reduction Zone
- Clay Dam
- Drainage Ditch

Ecology and Environment, Inc.
Superfund Technical Assessement and Response Team
Region 5
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE	Site Layout Map	FIGURE	3
SITE	Windham Alloys Site	TDD	S05-0003-011
CITY	Windham STATE Ohio	SCALE	Not to Scale
SOURCE	Ecology and Environment, Inc.	DATE	1999

1.2 Excavation of contaminated materials

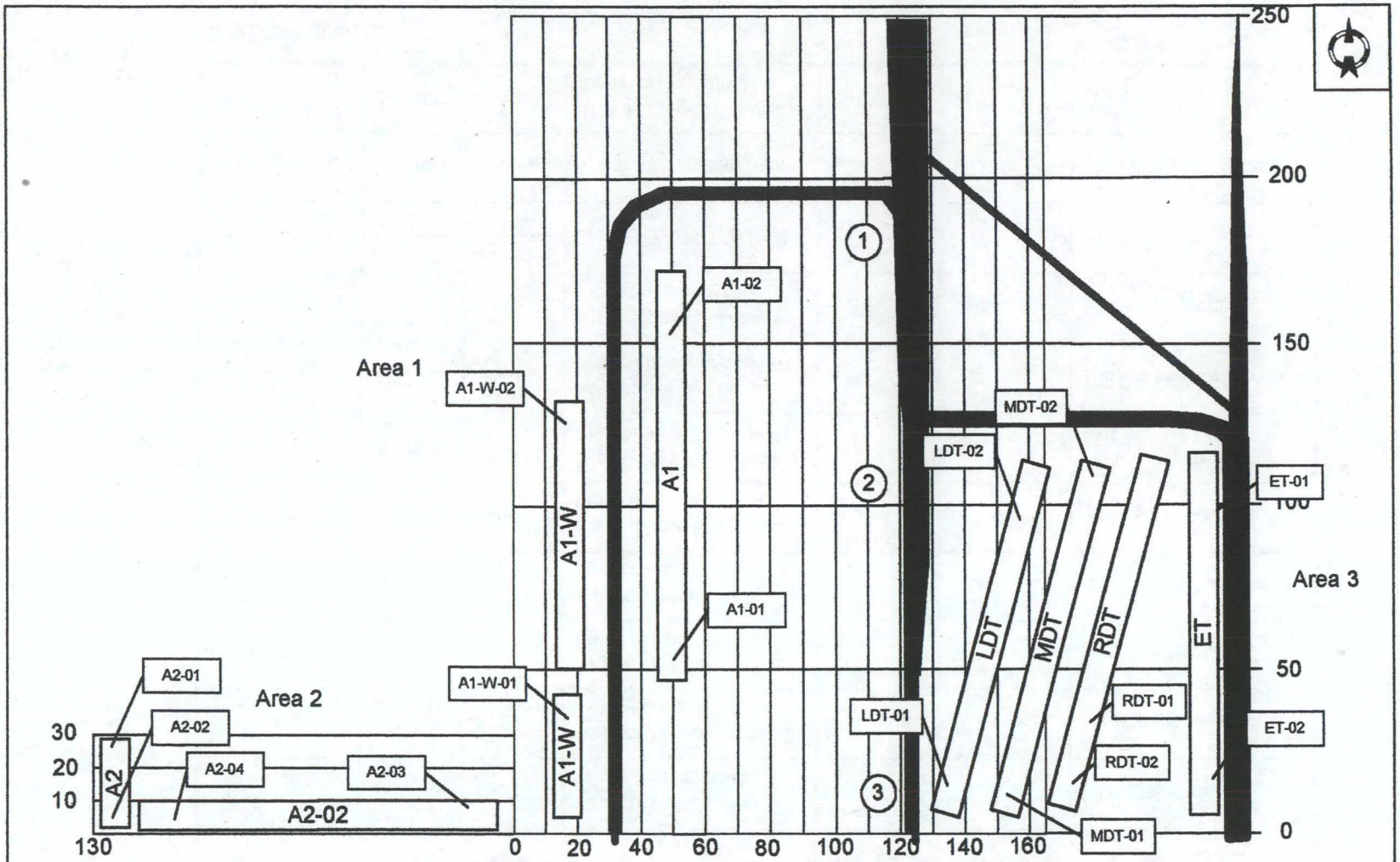
Prior to the start of excavation of, an extent of contamination study was conducted. The extent of contamination was determined from the results of test trenching, sampling, and X-ray fluorescence (XRF) screening. A total of 9 test trenches were excavated in potentially impacted areas indicated by the electromagnetic survey conducted during the 1999 Site Assessment conducted by E & E. Figure 4 shows exact test trench locations. Grab samples were collected from three depths within the trench at a minimum of two sample. The samples were screened utilizing a Spectrace 9000 XRF unit, to measure the lead and chromium concentrations within the soil samples. In addition, random samples were sent to North Coast Environmental Laboratories in Streetsboro, Ohio, for total and TCLP lead and chromium analysis. In addition, a total of 16 composite samples were collected for areas which were presumable not impacted. Table 2 contains XRF screening results and Table 3 contains analytical results.

Visual observations, XRF results, and analytical results indicated two areas of concern, Area 1 and Area 3. Although no buried waste was observed during test trenching, XRF and analytical results showed that Area 3 had elevated levels of lead and chromium. In Area 1, a large amount of buried waste was uncovered during test trenching and XRF and analytical results indicated elevated levels of lead and chromium.

Excavation began in Area 1 due to the fact that it posed the greatest potential threat. Excavation began at the northern edge of the buried waste uncovered during test trench excavation and continued until no additional buried waste was uncovered. The area excavated was a pit approximately 50 ft by 50 ft and 9 ft in depth. A 5-point verification sample was collected for the bottom of the excavation pit and analytical results indicated that the lead and chromium concentrations were below cleanup levels. The excavated soil was staged for on-site treatment.

A total of 25 partially intact containers and a multitude of crushed containers were uncovered during excavation. The intact containers were staged, opened, and inventoried. The intact containers consisted of twenty-four 10-gallon metal containers filled with brown powder and solid debris, and one 5-gallon plastic container filled with metal pellets. START conducted air monitoring during drum inventory with a PID, CGI, and radiation meter with no readings above background levels. The intact drums were crushed and mixed into the waste pile.

The area north of the excavation pit in Area 1 consisted of approximately a 75 ft by 75 ft area and was excavated to approximately one foot. A 10-point composite sample was collected upon completion of excavation with results indicated lead and chromium concentrations below cleanup levels. The excavated soil was staged on the concrete pad in Pile #2.



Legend

Depth pit

Test trench

Ecology and Environment, Inc.
Superfund Technical Assessment and Response Team
Region 5
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE	Test Trench Map	FIGURE	4
SITE	Windham Alloys	TDD	S05-0003-011
CITY	Windham STATE Ohio	SCALE	Shown in feet
SOURCE	Ecology and Environment, Inc.	DATE	2000

Table 2
XRF SCREENING SOIL ANALYSIS

WINDHAM ALLOYS SITE
WINDHAM, PORTAGE COUNTY, OHIO
(Units = ppm)

SAMPLE ID	TIME	DATE	LOCATION	XRF [Cr]	XRF [Pb]	Soil Characteristic
ET-01	3/27/00	1030	Eastern Trench, clay interface, sample #2	478	22	Black, silt, top soil
ET-T-02	3/27/00	1115	Eastern Trench, top layer, sample #2	494	ND	Lt. Brown, loose clay
ET-M-02	3/27/00	1115	Eastern Trench, middle layer, sample #2	521	ND	Black, silty clay
ET-B-02	3/27/00	1100	Eastern Trench, bottom layer, sample #2	331	ND	Brown, loose clay
RDT-T-01	3/27/00	1240	Right diagonal Trench, top layer, sample #1	468	662	Gray silty loose clay
RDT-M-01	3/27/00	1240	Right diagonal Trench, middle layer, sample #1	388	608	Black silt, moist, top soil
RDT-B-01	3/27/00	1240	Right diagonal Trench, bottom layer, sample #1	414	ND	Dark brown, silty clay
RDT-T-02	3/27/00	1240	Right diagonal Trench, top layer, sample #2	787	318	Brown silty clay
RDT-B-01-D	----------	---------	Duplicate of RDT-B-01	163	ND	****
WA-DD-01	3/27/00	1400	Western drainage ditch	811	ND	Yellow tinted water
MDT-T-01	3/27/00	1500	Middle diagonal trench, top layer, sample #1	391	2032	Brown dense silt

Key at end of table.

Table 2
XRF SCREENING SOIL ANALYSIS

WINDHAM ALLOYS SITE
WINDHAM, PORTAGE COUNTY, OHIO
(Units = ppm)

SAMPLE ID	TIME	DATE	LOCATION	XRF [Cr]	XRF [Pb]	Soil Characteristic
MDT-M-01	3/27/00	1510	Middle diagonal trench, middle layer, sample #1	300/747	544	Black organic/ moist
MDT-B-01	3/27/00	1515	Middle diagonal trench, bottom layer, sample #1	570	ND	Black silty clay
MDT-T-02	3/27/00	1530	Middle diagonal trench, top layer, sample #2	740	37	Black silt, organic
LDT-T-01	3/27/00	1545	Left diagonal trench, top layer, sample #1	625	234	Brown silt
LDT-M-01	3/27/00	1555	Left diagonal trench, middle layer, sample #1	683	ND	Black silt
LDT-B-01	3/27/00	1600	Left diagonal trench, bottom layer, sample #1	342	ND	Brown, loose clay
LDT-T-02	3/27/00	1605	Left diagonal trench, top layer, sample #2	571	ND	Lt brown sandy silt
BG-01	3/28/00	1020	Background, Hill residence, east of gate	636	352	Black top soil
A1-T-01	3/27/00	1700	Area 1, top layer, sample #1	449	256	Brown sandy silt
A1-M-01	3/27/00	1710	Area 1, middle layer, sample #1	250/462	1800	Black/yellow clay
A1-B-01	3/27/00	1715	Area 1, bottom layer, sample #1	715	ND	Black clay

Key at end of table.

Table 2
XRF SCREENING SOIL ANALYSIS

WINDHAM ALLOYS SITE
WINDHAM, PORTAGE COUNTY, OHIO
(Units = ppm)

SAMPLE ID	TIME	DATE	LOCATION	XRF [Cr]	XRF [Pb]	Soil Characteristic
A1-T-02	3/27/00	1720	Area 1, Top layer, sample #2	480	ND	Black silt
EDD-01	3/28/00	1130	Eastern drainage ditch	347	ND	Faint yellowish tint
MDT-M-01	***	****	Re-screened after background recalibrated	398	149	****
MDT-M-01	****	*****	Re-screened Fine Soil	250/590	166	****
MDT-M-01	*****	******	Re-screened Fine Soil, Background recalibrated	ND	131	****
WSS-01	3/28/00	1645	E&E SA Report location	380	127	****
WSS-02	3/28/00	1645	E&E SA Report location	460	365	*****
WSS-03	3/28/00	1645	E&E SA Report location	420/510	374	*****
WSS-04	3/28/00	1645	E&E SA Report location	480	446	*****
A2-T-01	3/28/00	0900	Area 2, trench #1, Top layer	460	ND	Dense black silty clay
A2-M-01	3/28/00	0900	Area 2, trench #1, Middle layer	180	ND	Brown sandy clay

Key at end of table.

Table 2
XRF SCREENING SOIL ANALYSIS

WINDHAM ALLOYS SITE
WINDHAM, PORTAGE COUNTY, OHIO
(Units = ppm)

SAMPLE ID	TIME	DATE	LOCATION	XRF [Cr]	XRF [Pb]	Soil Characteristic
A2-B-01	3/28/00	0900	Area 2, trench #1, Top layer	290	22	Lt. Brown sandy clay
A2-T-02	3/28/00	0910	Area 2, trench #1, Top layer, sample #2	540	41	Black silt
A2-T-03	3/28/00	1010	Area 2, trench #2, Top layer, sample #1	190	77	Black silt
A2-M-03	3/28/00	1010	Area 2, trench #2, middle layer, sample #1	300/260	60	Brown silty sand
A2-B-04	3/28/00	1010	Area 2, trench #2, bottom layer, Sample #1	510	ND	Grey firm clay
A2-T-04	3/28/0	1025	Area 2, trench #2, top layer, sample #2	410	ND	Brown clay
A1W-01	3/28/00	1130	Area 1, west of ditch, sample 1	350/340	25	Brown sand
A1W-02	3/28/00	1145	Area 1, west of ditch, sample 2	500/280	ND	Brown silty clay
A1-V-01W	3/29/00	1100	Area 1- excavation,, verification , west	450	ND	Brown clay
A1-V-01F	3/29/00	1100	Area1- floor	380	ND	Grey clay
A1-V-01E	3/29/00	1100	Area 1-East	490	1,700	Brown Clay

Key at end-of table.

Table 2
XRF SCREENING SOIL ANALYSIS

WINDHAM ALLOYS SITE
WINDHAM, PORTAGE COUNTY, OHIO
(Units = ppm)

SAMPLE ID	TIME	DATE	LOCATION	XRF [Cr]	XRF [Pb]	Soil Characteristic
A1-01-P	3/29/00	1230	Area 1-powder	520	2200	Yellow powder
WA-A1-03	3/29/00	1000	Area 1- SW bottom	360	ND	Brown Silt/Top soil
WA-A1-06	3/29/00	1115	Area 1- S Middle	480	38	Brown Silt/Top soil
WA-A1-09	3/29/00	1200	Area1 – SE	250	ND	Brown Silt/Top soil
WA-A1-02	3/29/00	947	Area 1- W Middle	340	ND	Brown Silt/Top soil
WA-A1-05	3/29/00	1025	Area 1- Middle-center	480	ND	Brown Silt/Top soil
WA-A1-08	3/29/00	1135	Area 1- E-middle	520	ND	Brown Silt/Top soil
WA-A1-01	3/29/00	940	Area 1- Top NW	342	ND	Brown Silt/Top soil
WA-A1-04	3/29/00	1015	Area 1- Top Center	389	ND	Brown Silt/Top soil
WA-A1-07	3/29/00	1040	Area 1- Top NE	420	ND	Brown Silt/Top soil
WA-A3-01	3/29/00	1300	Area 3- SW	560	2232	Brown Silt/Top soil

Key at end of table.

Table 2
XRF SCREENING SOIL ANALYSIS

WINDHAM ALLOYS SITE
WINDHAM, PORTAGE COUNTY, OHIO
(Units = ppm)

SAMPLE ID	TIME	DATE	LOCATION	XRF [Cr]	XRF [Pb]	Soil Characteristic
WA-A3-02	3/29/00	1210	Area 3- NW	520	189	Brown Silt/Top soil
WA-A3-03	3/29/00	1215	Area 3- S middle	180	397	Brown Silt/Top soil
WA-A3-04	3/29/00	1230	Area 3- N middle	450	15	Brown Silt/Top soil
WA-A3-05	3/29/00	1240	Area 3- SE	480	2052	Brown Silt/Top soil
WA-A3-06	3/29/00	1245	Area 3- NE	470	487	Brown Silt/Top soil
WA-A2-01	3/29/00	925	Area 2- East	360	ND	Brown Silt/Top soil

Key:

XRF = X-ray fluorescence detector.
[Cr] = Chromium concentration.
[Pb] = Lead concentration.
ND = Below detection level.
ppm = Parts per million.
**** = No results recorded.

Table 3

ANALYTICAL RESULTS FOR TEST TRENCH AND EXTENT OF CONTAMINATION SAMPLING
WINDHAM ALLOYS SITE
WINDAHAM, PORTAGE COUNTY, OHIO

March/April 2000

Date	Sample ID	Sample Location	Total Pb (mg/Kg)	Total Cr (mg/Kg)	Total Cr VI (mg/Kg)	TCLP Pb (mg/L)	TCLP Cr (mg/L)
3/27/00	RDT-M-01	Right diagonal trech, middle layer, sample location #1	9.75	15.94	<0.25	NA	NA
3/27/00	MDT-T-01	Middle drainage trench, top layer, sample location #1	4650	62.51	NA	38.38	0.01
3/27/00	A1-M-01	Area 1, test trech #1, middle layer	4175	0.22	NA	0.22	0.22
3/29/00	WA-A1-03	Area 1, SW bottom grid	557.5	134.4	NA	ND	0.18
3/29/00	WA-A1-06	Area 1, S Middle grid	799.4	269.9	NA	ND	0.15
3/29/00	WA-A1-09	Area 1, SE grid	871.8	94.51	NA	ND	0.05
3/29/00	WA-A1-02	Area 1, W Middle grid	98.04	33.96	NA	ND	0.01
3/29/00	WA-A1-05	Area 1, Mid- Center grid	144.1	66.33	NA	ND	0.13
3/29/00	WA-A1-08	Area 1, E Middle grid	31.1	15.02	NA	ND	ND
3/29/00	WA-A1-01	Area 1, Top NW grid	48.16	25.70	NA	0.13	0.02
3/29/00	WA-A1-04	Area 1, Top Center grid	27.80	18.17	NA	ND	ND

Key at end of table.

Table 3 (Continued)

ANALYTICAL RESULTS FOR TEST TRENCH AND EXTENT OF CONTAMINATION SAMPLING
WINDHAM ALLOYS SITE
WINDAHAM, PORTAGE COUNTY, OHIO

March/April 2000

Date	Sample ID	Sample Location	Total Pb (mg/Kg)	Total Cr (mg/Kg)	Total Cr VI (mg/Kg)	TCLP Pb (mg/L)	TCLP Cr (mg/L)
3/29/00	WA-A1-07	Area 1, Top NE grid	41.6	16.95	NA	ND	ND
3/29/00	WA-A3-01	Area 3, SW grid	13,930	191.7	NA	3.96	0.01
3/29/00	WA-A3-02	Area 3, NW grid	1,077	53.78	NA	1.47	ND
3/29/00	WA-A3-03	Area 3, S Middle grid	1,197	102.5	NA	2.50	0.02
3/29/00	WA-A3-04	Area 3, N Middle grid	395.2	22.97	NA	0.95	ND
3/29/00	WA-A3-05	Area 3, SE grid	7,288	26.01	NA	0.78	ND
3/29/00	WA-A3-06	Area 3, NE grid	1,178	41.42	NA	2.65	ND
3/29/00	WA-A2-01	Area 2, E grid	88.12	98.21	NA	ND	ND

Key:

mg/L = milligrams per liter.
mg/Kg = milligrams per killograms.
ND = not detected.
NA = not analyzed for.

Source: North Coast Environmental Laboratories, Streetsboro, Ohio.

The southern portion of Area 1 was excavated to a depth of one foot with the exception of the southwestern corner which was excavated to a depth of 3 feet. This was done as a contingency since the soil appeared to be disturbed in this area. The soil removed from this area was staged for on-site treatment

In Area 3, a 75 ft by 50 ft area was excavated to a depth of 2 ft. A 5-point verification sample was collected at the bottom of the excavation pit. Analytical results indicated that lead and chromium concentrations were still above cleanup levels. Therefore, an additional foot of soil was excavated from this area (Figure 5). The area was re-sampled with analytical results below cleanup levels. Soil excavated was staged north of Area 3 due to the fact that Area 3 will be utilized as the on-site treatment area.

1.3 Water Management

The site is located in a wetland area and is surrounded by drainage ditches. Therefore, water management was a primary concern to prevent the potential for contaminated water run-off. A total of three earthen dams were constructed at strategic locations to allow for all run-off water to be contained in the drainage ditches surrounding the excavation areas. A by-pass ditch was constructed to prevent any backup of water which could possible flood the municipal well field.

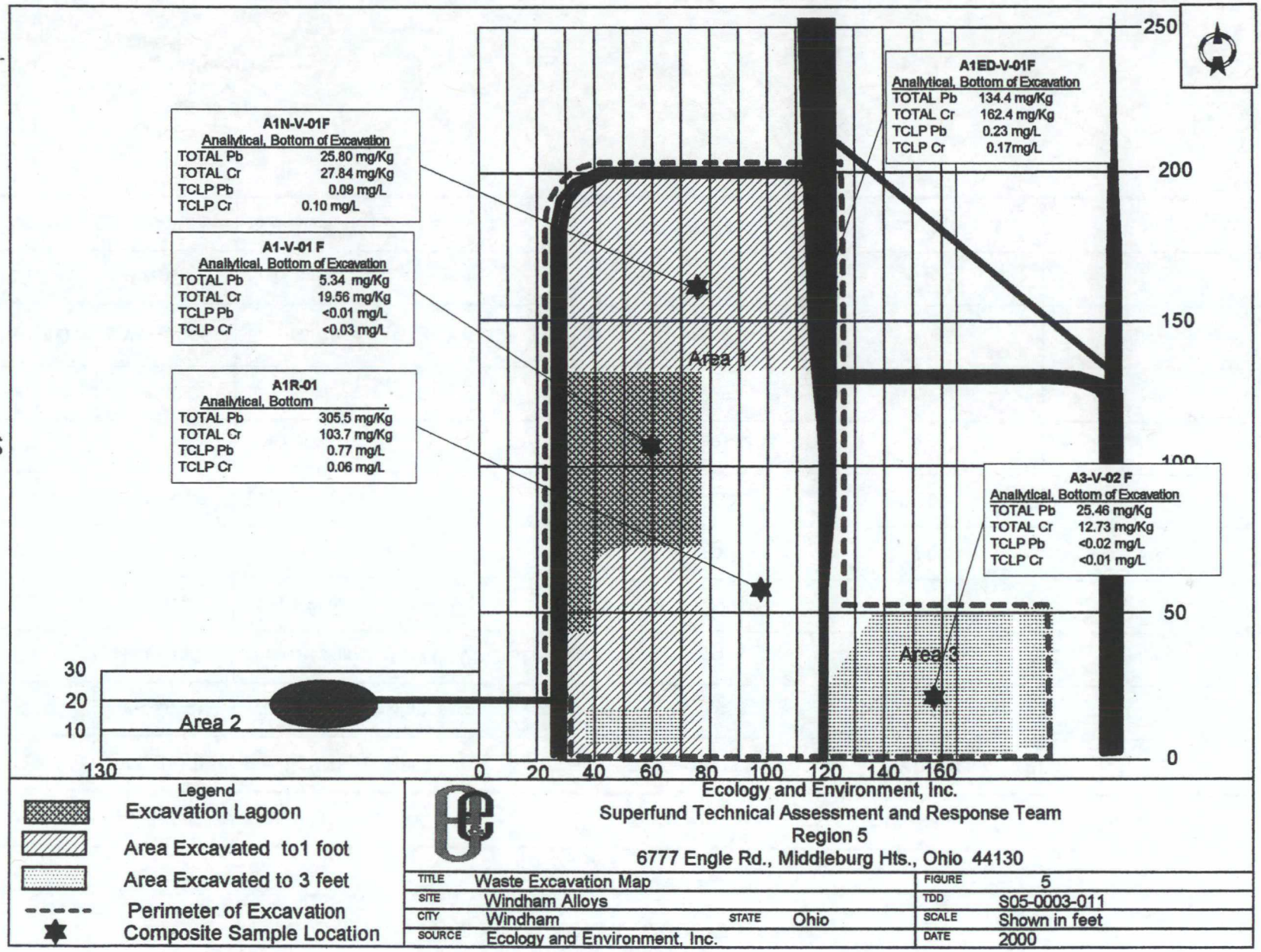
Due to heavy rainfall during excavation activities, a total of seven 20,000 gallon tanks were mobilized to site. The tanks were utilized to hold water which came in contact with the waste. In addition, a retention pond was constructed in Area 2 to reroute drainage from the facility which was draining into Area 1.

A grab sample was collected from each tank and analyzed for lead and chromium concentrations (Table 4). Analytical results were above Ohio EPA discharge levels and therefore transportation and disposal of the water was coordinated. Between April 17, and May 12, 2000, a total of 317,100 gallon of water was transported to Envirite of Ohio, Inc., located in Canton, Ohio for final disposal. The water was transported off site as non-hazardous, non-regulated liquid.

1.4 On-site waste treatment

On April 25, 2000, ERRS began to mobilize off-site cement kiln dust to site. The excavated soil was mixed with cement kiln dust to encapsulate the lead and chromium; therefore, decreasing the TCLP concentrations to nonhazardous levels. The treatment area was established in Area 3 and consisted of a treatment pit and a staging area for the cement kiln dust. The ratio of cement kiln dust was varied to optimize the pH of the soil. A total of 3,175 tons of soil was treated with a total of 210 tons of cement kiln dust.

During on site treatment, a 10 point composite sample was collected for every 500 tons of treated soil. The samples were analyzed for TCLP lead and chromium concentrations. Once analytical results verified that the TCLP lead



Legend

- Excavation Lagoon
- Area Excavated to1 foot
- Area Excavated to 3 feet
- Perimeter of Excavation
- Composite Sample Location

Ecology and Environment, Inc.
Superfund Technical Assessment and Response Team
Region 5
6777 Engle Rd., Middleburg Hts., Ohio 44130

TITLE	Waste Excavation Map	FIGURE	5
SITE	Windham Alloys	TDD	S05-0003-011
CITY	Windham STATE Ohio	SCALE	Shown in feet
SOURCE	Ecology and Environment, Inc.	DATE	2000

Table 4

ANALYTICAL RESULTS FOR WATER SAMPLE
WINDHAM ALLOYS SITE
WINDAHAM, PORTAGE COUNTY, OHIO

March/April 2000
(units = mg/L)

Date	Sample ID	Sample Location	Lead	Chromium	Chromium VI
3/23/00	WA-RW-01	Residential well- Hill	< 0.020	< 0.010	NA
3/27/00	WA-DD-01	Western drainage ditch	0.036	29.01	28.0
3/31/00	DISP-002	Disposal sample, Tank CFVP-243L	1.65	ND	NA
4/4/00	WA-W-01	Area 1,Water from excavation pit	0.09	0.10	NA
4/4/00	WA-W-02	Water from Frac-tank B	ND	2.00	NA
4/6/00	WA-W-03	East end of horseshoe ditch	0.03	0.03	NA
4/11/00	WA-W-04	Frac-tank C	0.081	0.069	NA
4/11/00	WA-W-05	Frac-tank D	0.019	0.030	NA
4/11/00	WA-W-06	Frac-tank E	0.144	0.043	NA
4/11/00	WA-W-07	Frac-tank F	0.046	0.030	NA
4/13/00	WA-W-08	East Ditch Area 1	0.030	<0.010	NA

Key:

mg/L = milligrams per liter.
ND = not detected.
NA = not analyzed for.
< = less than

Source: North Coast Environmental Laboratories, Streetsboro, Ohio.

and chromium concentrations were below regulatory limits, the soil was transported off site as non hazardous waste for final disposal. Table 5 contains analytical results from treated soil samples.

1.5 Construction of clay cap over excavated area

Upon completion of excavation, sample results indicated that the lead and chromium concentrations were elevated, however below cleanup levels. Therefore, a one foot clay cap was constructed over the excavated area as a contingency to prevent any contaminant migration. ERRS constructed the clay cap between June 27, 2000 and June 29, 2000, utilizing a total of 450 tons of off-site clay.

1.6 Restoration and Demobilization

On May 26, 2000, all personnel and equipment was demobilized from the WA site due to adverse weather conditions.

On June 26, 2000, U.S. EPA, ERRS, and START remobilized to site to complete restoration of the WA site. Restoration activities consisted of backfilling, grading, and seeding the excavated areas. In addition, earthen dams established for water management were removed and site drainage was reestablished.

ERRS removed approximately 12,870 gallons of hazardous liquid from the 15,000-gallon on-site AST. The liquid was transported off site to Petrochem, Inc., located in Detroit, Michigan for fuel blending. The piping to the AST were cut in order to decommission the AST.

Final site activities consisted of repairing a portion of a concrete pad damaged during removal activities. Off site gravel was mobilized to site to restore the gate entrance to the excavated areas.

On June 29, 2000, all personnel and equipment was demobilize from the WA site.

2. Treatment, disposal, or alternative technology approaches pursued

Excavated soil and waste were treated on site to decrease the TCLP lead and chromium concentrations to nonhazardous levels. The lime and silicates within the kiln dust react in the presence of water to solidify the soil and therefore, decreasing the leachability of the lead and chromium. The treated soil and waste were then transported off-site as non-hazardous waste to be landfilled. Water collected on site was transported off-site for recycling. Table 6 contains specific disposal information for all waste streams.

Table 5

ANALYTICAL RESULTS FOR SOIL SAMPLE
WINDHAM ALLOYS SITE
WINDAHAM, PORTAGE COUNTY, OHIO

March/April 2000

Date	Sample ID	Sample Location	Total Pb (mg/Kg)	Total Cr (mg/Kg)	TCLP Pb (mg/L)	TCLP Cr (mg/L)
3/29/00	A1-V-01 W	Area 1, Verification sample of western wall of excavation pit	146.3	199.4	0.11	ND
3/29/00	A1-V-01 F	Area 1, Verification sample of floor of excavation pit	5.34	19.56	ND	ND
3/29/00	A1-V-01 E	Area 1, Verification sample of eastern wall of excavation pit	10,280	79.32	1.2	0.01
3/29/00	A1-01-P	Area 1, Yellow powder	1241	58.04	17.86	1.19
3/31/00	A1W-02F	Area 1, West drainage area	4.56	5.62	ND	ND
3/31/00	A1-SW-SD	Area 1, SW- drainage area	7.11	5.26	ND	ND
4/3/00	A1N-V01-F	Area 1, north verification	25.80	27.89	0.09	0.11
4/4/00	P2-01	Pile #2, soil grab sample	NA	NA	1.48	ND
4/4/00	P2-02	Pile #2, soil grab sample	NA	NA	0.53	0.08
4/4/00	P2-03	Pile #2, soil grab sample	NA	NA	ND	ND
4/4/00	P2-04	Pile #2, soil grab sample	NA	NA	0.13	0.06

Key at end of table.

Table 5

ANALYTICAL RESULTS FOR SOIL SAMPLE
WINDHAM ALLOYS SITE
WINDAHAM, PORTAGE COUNTY, OHIO

March/April 2000

Date	Sample ID	Sample Location	Total Pb (mg/Kg)	Total Cr (mg/Kg)	TCLP Pb (mg/L)	TCLP Cr (mg/L)
4/4/00	P2-05	Pile #2, soil grab sample	NA	NA	ND	3.09
4/4/00	P2-06	Pile #2, soil grab sample	NA	NA	0.24	0.20
4/4/00	P2-07	Pile #2, soil grab sample	NA	NA	0.67	2.10
4/4/00	P2-08	Pile #2, soil grab sample	NA	NA	0.13	0.08
4/4/00	P2-09	Pile #2, soil grab sample	NA	NA	0.07	0.02
4/4/00	P2-10	Pile #2, soil grab sample	NA	NA	0.07	0.02
4/4/00	P1-01	Pile #1, waste grab sample	NA	NA	2.23	0.19
4/4/00	P1-02	Pile #1, waste grab sample	NA	NA	0.33	ND
4/4/00	P1-03	Pile #1, waste grab sample	NA	NA	1.88	ND
4/4/00	P1-04	Pile #1, waste grab sample	NA	NA	0.21	ND
4/4/00	P1-05	Pile #1, waste grab sample	NA	NA	0.31	0.01

Key at end of table.

Table 5

ANALYTICAL RESULTS FOR SOIL SAMPLE
WINDHAM ALLOYS SITE
WINDAHAM, PORTAGE COUNTY, OHIO

March/April 2000

Date	Sample ID	Sample Location	Total Pb (mg/Kg)	Total Cr (mg/Kg)	TCLP Pb (mg/L)	TCLP Cr (mg/L)
4/4/00	P1-06	Pile #1, waste grab sample	NA	NA	0.22	0.15
4/4/00	P1-07	Pile #1, waste grab sample	NA	NA	0.42	ND
4/4/00	P1-08	Pile #1, waste grab sample	NA	NA	0.42	0.23
4/4/00	P1-09	Pile #1, waste grab sample	NA	NA	0.35	0.27
4/4/00	P1-10	Pile #1, waste grab sample	NA	NA	3.60	0.35
4/6/00	A3-V-01F	Area 3, Verification, Floor	693.6	97.99	5.49	<0.01
4/7/00	A1ED-V-01F	Area 1, east ditch Sediment	134.4	162.4	0.23	0.17
4/7/00	A3-V-02	Area 3, verification, floor	25.46	12.73	<0.02	<0.01
4/13/00	A1-SW-01T	Area 1, SW corner, Top (Material removed-black mud)	367.5	19.5	0.88	<0.01
4/14/00	P3-01	Pile # 3	NA	NA	0.14	ND
4/14/00	P3-02	Pile # 3	NA	NA	ND	ND

Key at end of table.

Table 5

ANALYTICAL RESULTS FOR SOIL SAMPLE
WINDHAM ALLOYS SITE
WINDAHAM, PORTAGE COUNTY, OHIO

March/April 2000

Date	Sample ID	Sample Location	Total Pb (mg/Kg)	Total Cr (mg/Kg)	TCLP Pb (mg/L)	TCLP Cr (mg/L)
4/14/00	P3-03	Pile # 3	NA	NA	0.86	ND
4/14/00	P3-04	Pile # 3	NA	NA	25.03	ND
4/14/00	P3-05	Pile # 3G	NA	NA	ND	ND
4/14/00	P3-06	Pile # 3	NA	NA	ND	0.11
4/14/00	A1R-01	Area #1, Road North	305.5	103.7	0.77	0.06
4/14/00	A1R-02	Area #1, Road South	782.3	219.7	0.33	<0.01

Key:

mg/L = milligrams per liter.
Mg/Kg = milligrams per kilograms.
ND = not detected.
NA = not analyzed for.

Source: North Coast Environmental Laboratories, Streetsboro, Ohio under Delivery Order Number ???????.

EXHIBIT 8. MATERIALS AND DISPOSITION

Material	Amount	Method	Location
Non Hazardous Non Regulated Liquid	317,102 gallons	Recycling	Envirite of Ohio, Inc. Canton, Ohio
Non Hazardous Soil	3,385 tons	Landfill	Mill Services, Inc. Bulger, PA
Non-Hazardous Debris	20 cubic yards	Landfill	Mills Services, Inc. Bulger, PA
Regulated Waste Flammable Liquid	12,870 gallons	Fuel Blending	Petrochem Processing Group of Notru, Inc. Detroit, Michigan

3. Public information and community relations activities

On March 27, 2000, U.S. EPA Office of Public Affairs issued a press release for the WA site.

D. Resources Committed

Clean up activities at the WA site under CERCLA were conducted by the ERRS contractor, ET, under contract number_____and DO number_____. Site activities under CERCLA commenced on March 13, 2000, and were completed June 29, 2000. Daily expenditures under CERCLA provided by ET totaled _____. A break down of contractor expenditures into major categories of labor, equipment, and other field cost, as well as cost incurred by U.S. EPA and START, is presented in Table 7.

Any indication of specific costs incurred at the site is only an approximation, subject to audit and final definitization by U.S. EPA. The OSC report is not meant to be a final reconciliation of costs associated with a particular site.

II. EFFECTIVENESS OF REMOVAL ACTIVITIES

A. Actions Taken by PRPs

No formal actions were conducted by the PRP.

B. Actions Taken by State and Local Agencies

Ohio Department of Health assisted U.S. EPA with establishing site specific removal criteria for lead and chromium contamination at the WA site.

C. Actions Taken by Federal Agencies and Special Teams

Monetary resources for all site activities were provided by U.S. EPA under CERCLA. Under the guidance of the OSC actions were taken to effectively mitigate threats posed by the hazardous substances present at the WA site.

D. Actions Taken by Contractors, Private Groups, and Volunteers

The U.S. EPA ERRS contractor, ET, conducted cleanup activities at the site. In addition to performing removal activities, ET coordinated the transportation and disposal of water and soil collected on site. ET provided all necessary personnel and equipment to conduct site activities.

The U.S. EPA START contractor, E &E, provided key personnel throughout the entirety of the removal. START provided assistance to the project in a number of key positions including: conducting multi media sampling, air monitoring, oversight of all site activities; maintaining OSC appendices; ensuring site expenditures were appropriate; and photo- and video-documentation of all site activities.

Table 9. REMOVAL PROJECT ESTIMATED TOTAL COST SUMMARY

Extramural Costs:
Total Cleanup Contractor Costs
Total START Costs
EXTRAMURAL SUBTOTAL
Intramural Costs:
EPA Direct Costs
EPA Indirect Costs
INTRAMURAL SUBTOTAL
ESTIMATED TOTAL PROJECT COSTS
PROJECT CEILING

All health and safety protocols and safety and environmental laws were followed during all site activities.

III. DIFFICULTIES ENCOUNTERED

A. Items That Affected the Response

Water Management: Since the WA site is located in a marshy area, heavy rain fall throughout the duration of the project caused a delay in removal activities. Therefore, water management became a key factor. Necessary actions were taken to attempt to divert water away from work areas. To mitigate the situation, facility runoff was diverted away from the exclusion zone; standing water was pumped out of the work areas; and swamp pads were mobilized to the site to allow access of heavy equipment to work areas. In addition seven 20,000 gallon tanks were mobilized to site to hold water, which had potentially come in contact with any contaminated soil and/or waste.

Task Organization: The efficiency of the removal was hindered due to the fact that the project was not divided into phases. All site activities, including excavation, treatment, disposal, and restoration, were considered one phase and therefore, one task was not complete prior to the start of the next. Operating in this manner created delays including postponing transportation and disposal of soil while waiting on laboratory results. In addition, the excavated areas were not backfilled and drainage reestablished prior to the start of on site treatment of soil. Therefore, heavy rains caused large amounts of standing water in the treatment area which delay the treated of soil until water was removed. Dividing the project into separate phases would have increased the overall efficiency of the removal.

Treatability test: A treatability study was not conducted for the on site treatment of lead and chromium contaminated soil and waste. The rational behind not conducting any bench scale testing was that personnel on site had extensive experience treating waste in this manner. However, difficulty was encountered when laboratory results for treated soil indicated TCLP lead concentrations higher than the nontreated soil. The higher TCLP levels were a result of raising the pH of the soil to an unacceptable range. The ratio of kiln dust and moisture utilized were adjusted to lower the pH of the soil until it was in the optimal pH range of approximately 10 standard units (s.u.).

B. Issues of Intergovernmental Coordination

There were no issues of intergovernmental coordination throughout WA site activities.

C. Difficulties Interpreting, Complying With, or Implementing Policies and Regulations

None.

IV. RECOMMENDATIONS

D. Means to Prevent a Recurrences of Discharge or Release

E. Means to Improve Removal Activities

A treatability study was not conducted for the on site treatment of the soil and waste with kiln dust. Not conducting this study proved to be a hindrance and caused a delay in the project. Extensive time was necessary to reassess the treatment protocol and to retreat approximately 25% of the soil. In addition transportation and disposal of soil had to also be delayed until an effective treatment method was determined.

Appendix A

Photodocumentaion

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 1
Date: March 23, 2000 **Direction:** North **Photographer:** J.Kimble
Description: This photograph shows the sign posted on the Windham Alloys site.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 2
Date: March 22, 2000 **Direction:** North **Photographer:** J. Kimble
Description: This photograph shows the ERRS crew clearing area for test trench excavations.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 3
Date: March 23, 2000 **Direction:** North **Photographer:** D. Pearce
Description: Overview of the main excavation area taken from an on-site manlift.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 4
Date: March 24, 2000 **Direction:** North **Photographer:** D.Pearce
Description: This photograph shows the ERRS crew constructing an earthen dam in the main excavation area.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 5
Date: March 24, 2000 **Direction:** North **Photographer:** D. Pearce
Description: This photograph shows the ERRS crew moving solid nonhazardous debris from the exclusion zone into roll-off boxes for transportation off-site for final disposal.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 6
Date: March 27, 2000 **Direction:** Northeast **Photographer:** D. Pearce
Description: This photograph shows the test trench dug in the eastern excavation area to evaluate potentially impacted areas.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 7
Date: March 28, 2000 **Direction:** West **Photographer:** ERRS Techician
Description: This photograph show START collecting a grab sample from a test trench in the main excavation area. The sample was screened using an X-ray fluorescence (XRF) unit for chromium and lead levels.

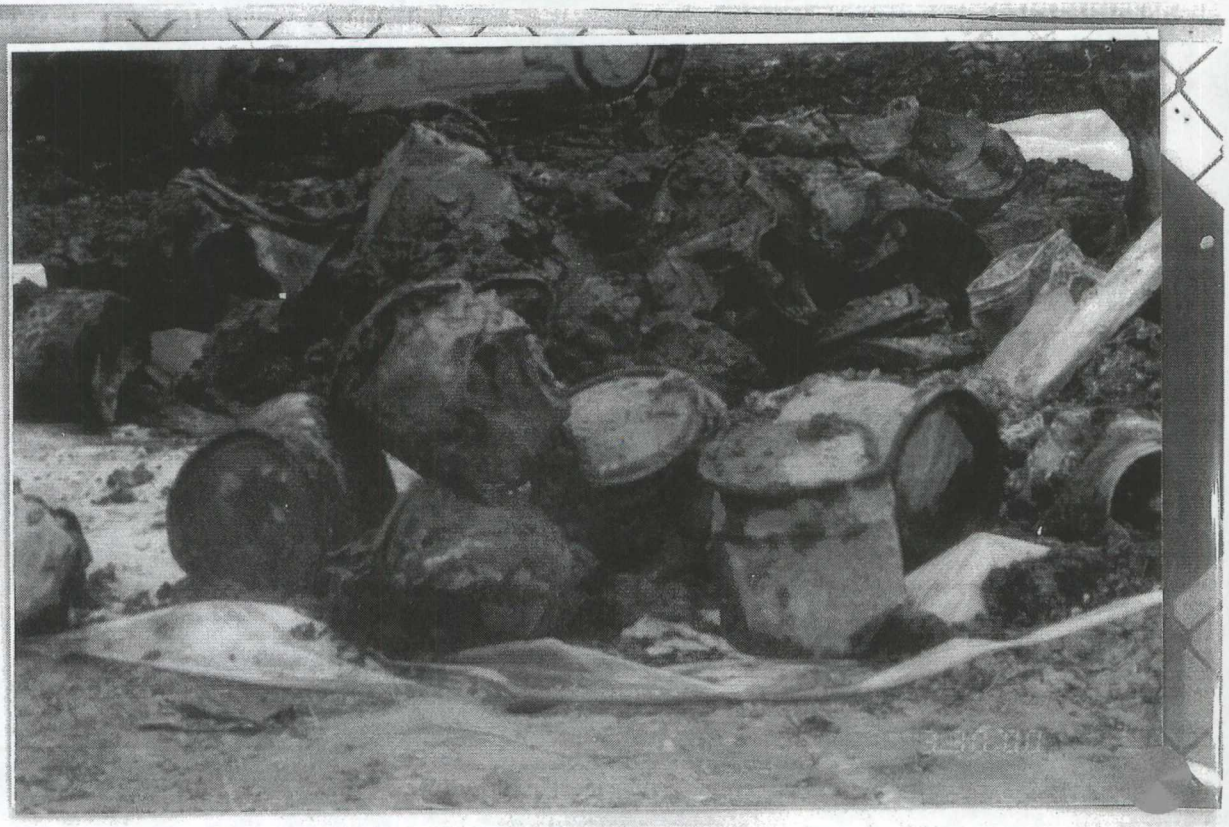
Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 8
Date: March 28, 2000 **Direction:** West **Photographer:** D. Pearce
Description: This photograph shows the ERRS crew starting excavation of the main excavation area. Note the crushed drums near the excavator bucket.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 9
Date: March 29, 2000 **Direction:** East **Photographer:** D. Pearce
Description: This photograph shows waste removed from the main excavation area.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 10
Date: March 29, 2000 **Direction:** South **Photographer:** D. Pearce
Description: View of solid waste located in the main excavation pit.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 11
Date: March 29, 2000 **Direction:** South **Photographer:** D. Pearce
Description: This photograph shows the excavation pit located in the main excavation area.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 12
Date: March 29, 2000 **Direction:** North **Photographer:** D. Pearce
Description: This photograph shows documents collected from the main excavation area.



Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 13
Date: March 30, 2000 **Direction:** East **Photographer:** D. Pearce
Description: This photograph shows the containers collected from the main excavation area.

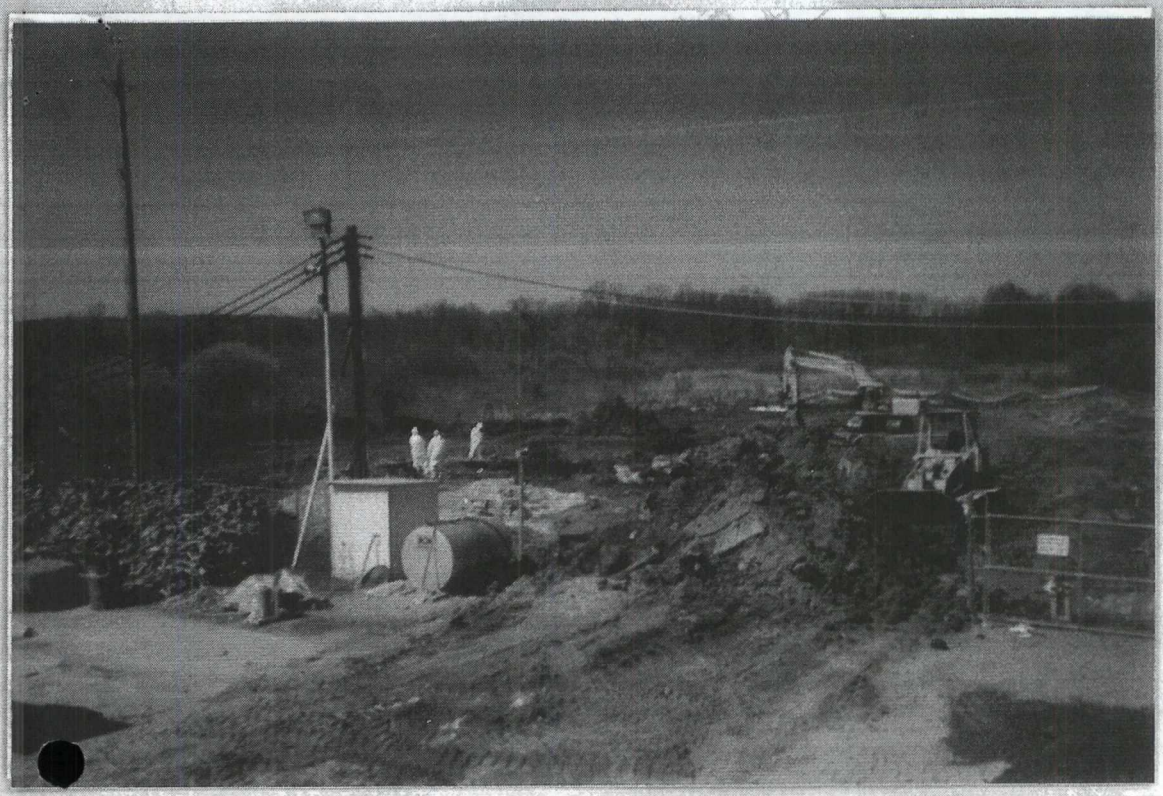
Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 14
Date: March 30, 2000 **Direction:** East **Photographer:** D. Pearce
Description: This photograph shows staged drums collected from the main excavation area.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 15
Date: March 29, 2000 **Direction:** Southwest **Photographer:** D. Pearce
Description: This photograph shows materials collected from the main excavation area.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 16
Date: March 31, 2000 **Direction:** South **Photographer:** D. Pearce
Description: This photograph shows a metal bin removed from the main excavation area.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 17
Date: March 31, 2000 **Direction:** Northwest **Photographer:** D. Pearce
Description: This photograph shows yellow discolored water at the bottom of the main excavation pit.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 18
Date: March 31, 2000 **Direction:** South **Photographer:** D. Pearce
Description: This photograph shows a view of the main excavation pit. Note the buried containers and yellow discolored water.



Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 19
Date: April 3, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph show an overview of the main excavation area operations.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 20
Date: April 3, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph show a view of two 20,000-gallon tank mobilized to site to collect the yellow discolored water.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 21
Date: April 3, 2000 **Direction:** Northwest **Photographer:** D. Pearce
Description: This photograph shows a view of water being pumped out of the eastern drainage ditch and into a 20,000 gallon tank.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 22
Date: April 5, 2000 **Direction:** East **Photographer:** D. Pearce
Description: This photograph shows a view of the eastern excavation area, which was initially excavated to approximately 2 feet.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 23
Date: April 6, 2000 **Direction:** West **Photographer:** D. Pearce
Description: This photograph shows a view of the eastern excavation area. Note the yellow discolored water and constructional debris.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 24
Date: April 6, 2000 **Direction:** North **Photographer:** D. Pearce
Description: This photograph shows the eastern drainage ditch, note that the southern portion has been scraped.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 25
Date: April 6, 2000 **Direction:** North **Photographer:** D. Pearce
Description: This photograph shows the eastern drainage ditch, note that the northern portion has been scraped.

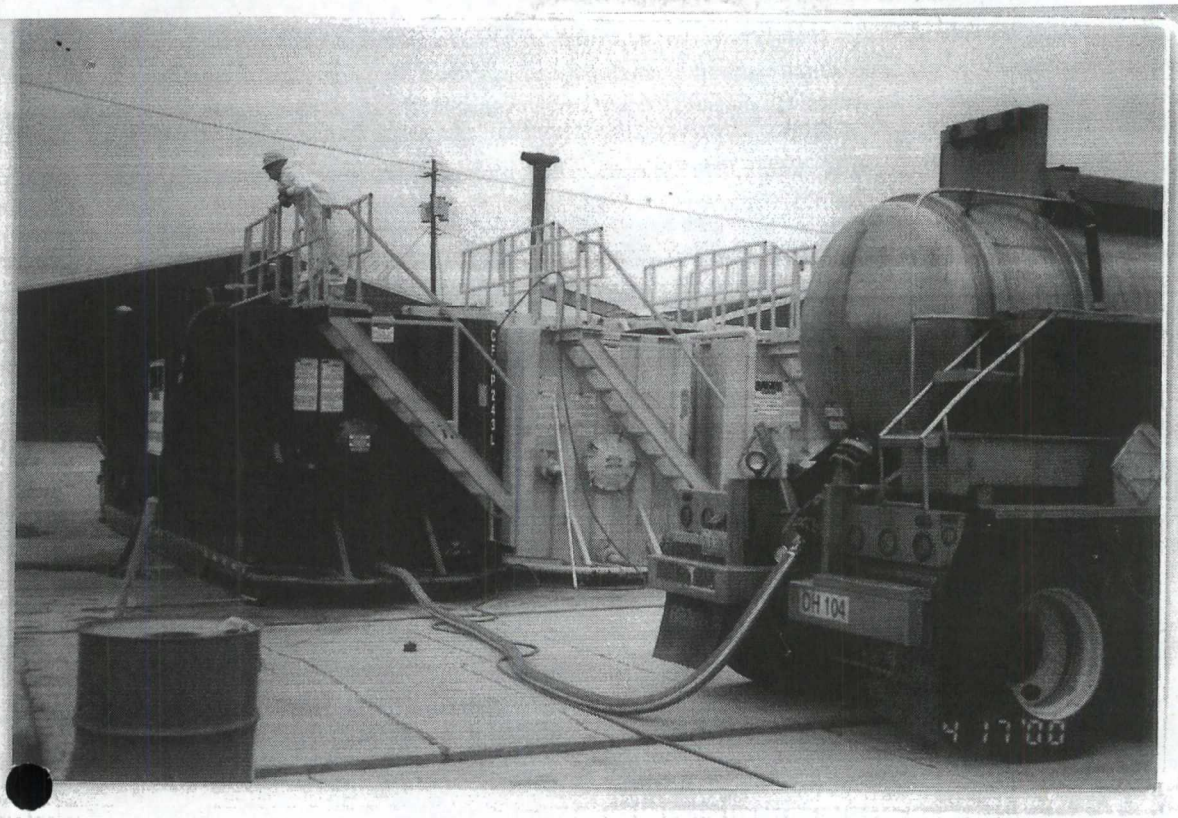
Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 26
Date: April 7, 2000 **Direction:** North **Photographer:** D. Pearce
Description: This photograph shows the eastern drainage ditch after water had been pumped out and the sediments had been scraped.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 27
Date: April 10, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows a view of the excavation area following evening thunderstorms. Note the ERRS crew assessing flooded areas and setting up pumping stations.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 28
Date: April 11, 2000 **Direction:** North **Photographer:** K. Smith
Description: ERRS mobilized swamp pads to site to enable removal activities to proceed under extremely wet conditions

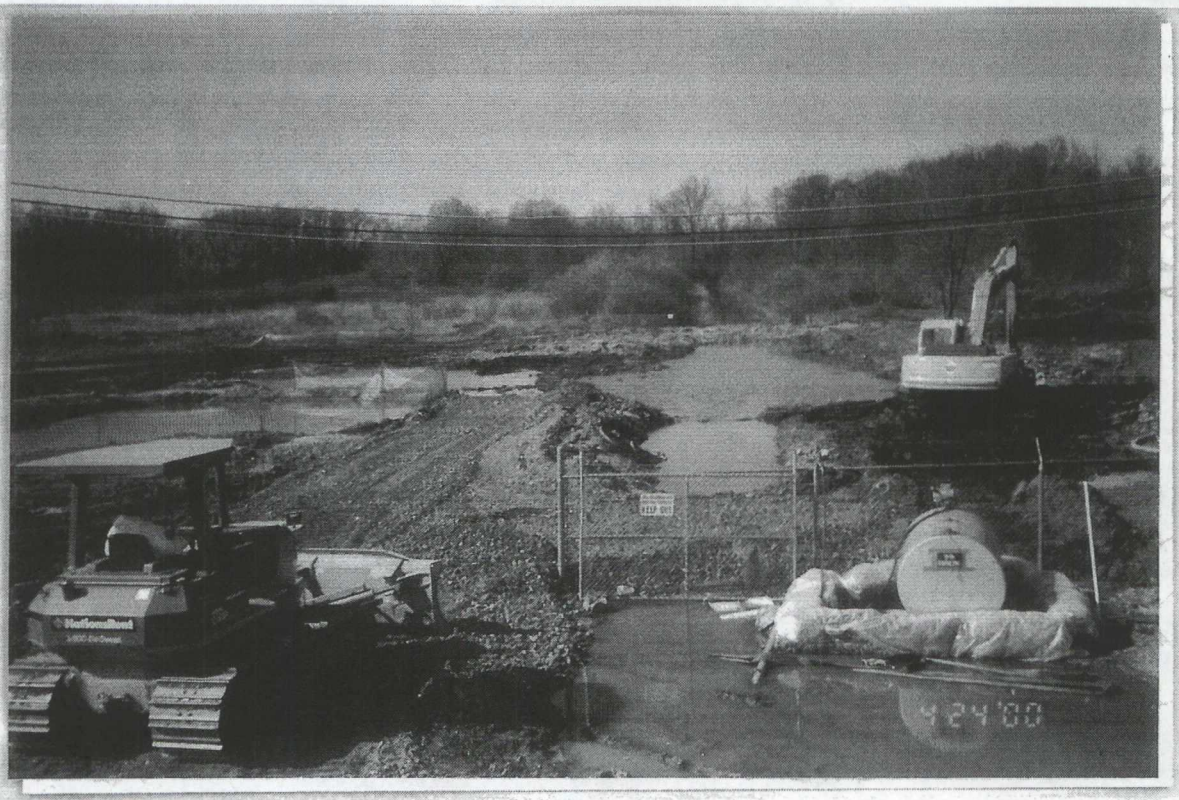
Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 29
Date: April 17, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows ERRS grading the main excavation area.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 30
Date: April 17, 2000 **Direction:** East **Photographer:** K.Smith
Description: This photograph shows ERRS backfilling the excavated areas.

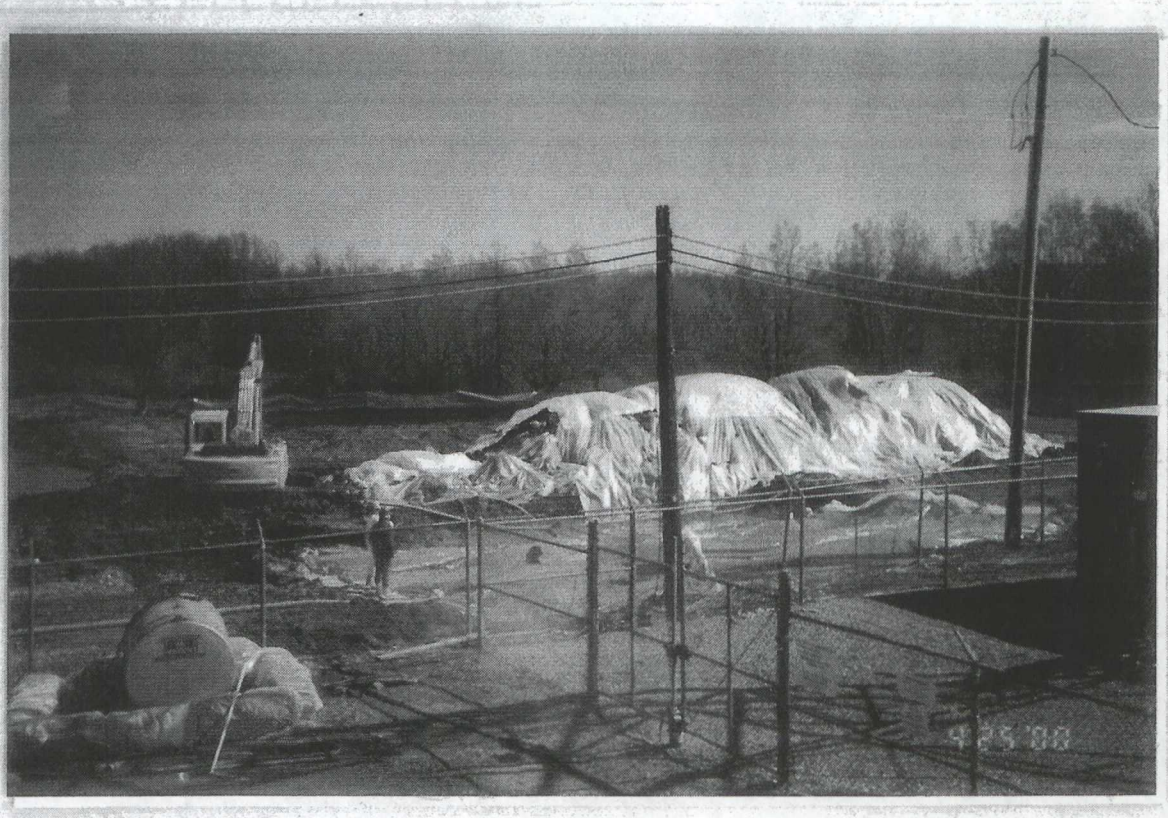


Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 31
Date: April 17, 2000 **Direction:** East **Photographer:** K. Smith
Description: This photograph shows a tanker being filled with contaminated water for transportation off site for final disposal.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 32
Date: April 19, 2000 **Direction:** South **Photographer:** K. Smith
Description: Off-site clay was mobilized to site and utilized to construct a clay cap over the excavated areas.



Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 33
Date: April 24, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows the construction of a gravel access road and continued backfilling operations.



Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 34
Date: April 25, 2000 **Direction:** Northeast **Photographer:** K. Smith
Description: The blue tarp covered area was the staging area utilized for the cement kiln dust utilized for on-site treatment of lead and chromium contaminated soil.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 35
Date: April 26, 2000 **Direction:** East **Photographer:** K. Smith
Description: This photograph shows the on-site treatment area utilized to mix lead and chromium-contaminated soil with cement kiln dust.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 36
Date: April 28, 2000 **Direction:** Northeast **Photographer:** K. Smith
Description: This photograph shows the on-site treatment area utilized to mix lead and chromium-contaminated soil with cement kiln dust

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 37
Date: May 2, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows ERRS pumping standing water from the on-site treatment area.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 38
Date: May 4, 2000 **Direction:** Northwest **Photographer:** K. Smith
Description: This photograph shows a view of ERRS decontaminating the concrete pad in preparation for transportation and disposal of waste.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 39
Date: May 8, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows ERRS loading treated soil into a truck for transportation off site for final disposal.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 40
Date: May 17, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph show the main excavation area prior to the construction of the clay cap.

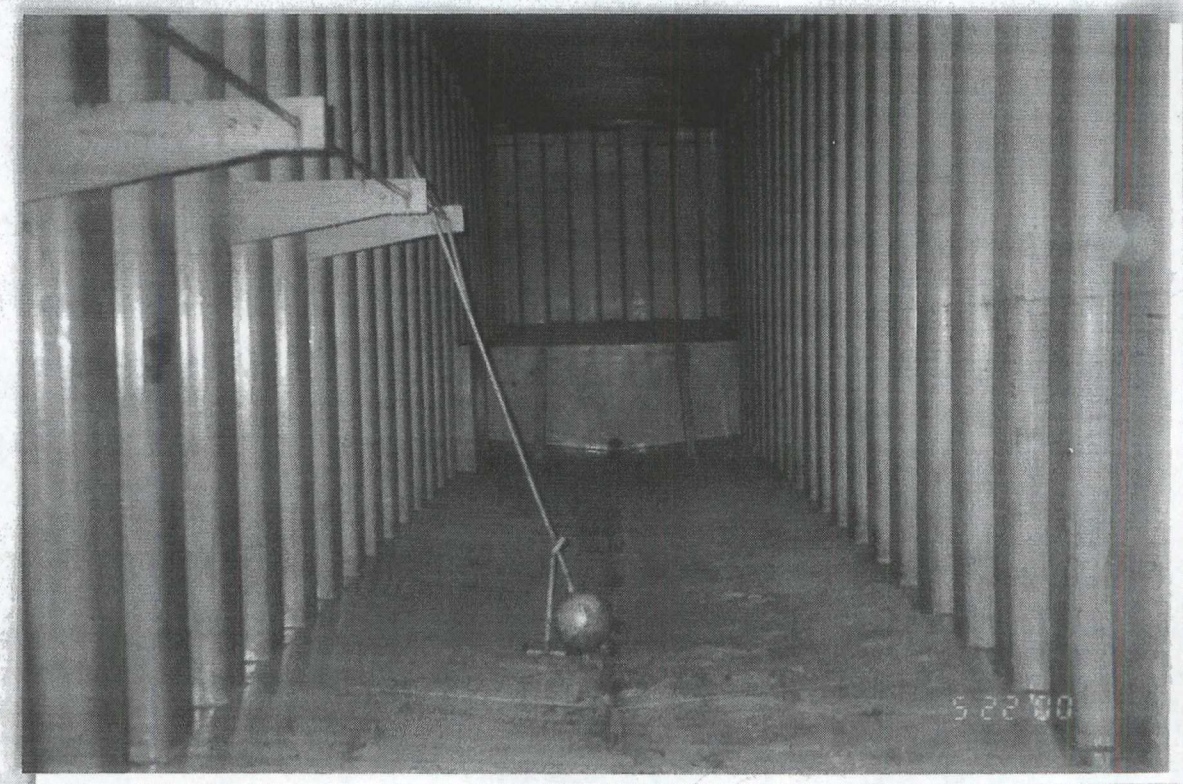
Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 41
Date: May 17, 2000 **Direction:** Northwest **Photographer:** K. Smith
Description: This photograph show the main excavation area prior to the construction of the clay cap.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 42
Date: May 19, 2000 **Direction:** East **Photographer:** K. Smith
Description: This photograph shows ERRS preparing a 20,000-gallon tank for final decontamination.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 43
Date: May 22, 2000 **Direction:** West **Photographer:** K. Smith
Description: This photograph shows ERRS transporting on-site scrap rubber to the loading dock.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 44
Date: May 22, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows ERRS transporting on-site scrap rubber to the loading dock.

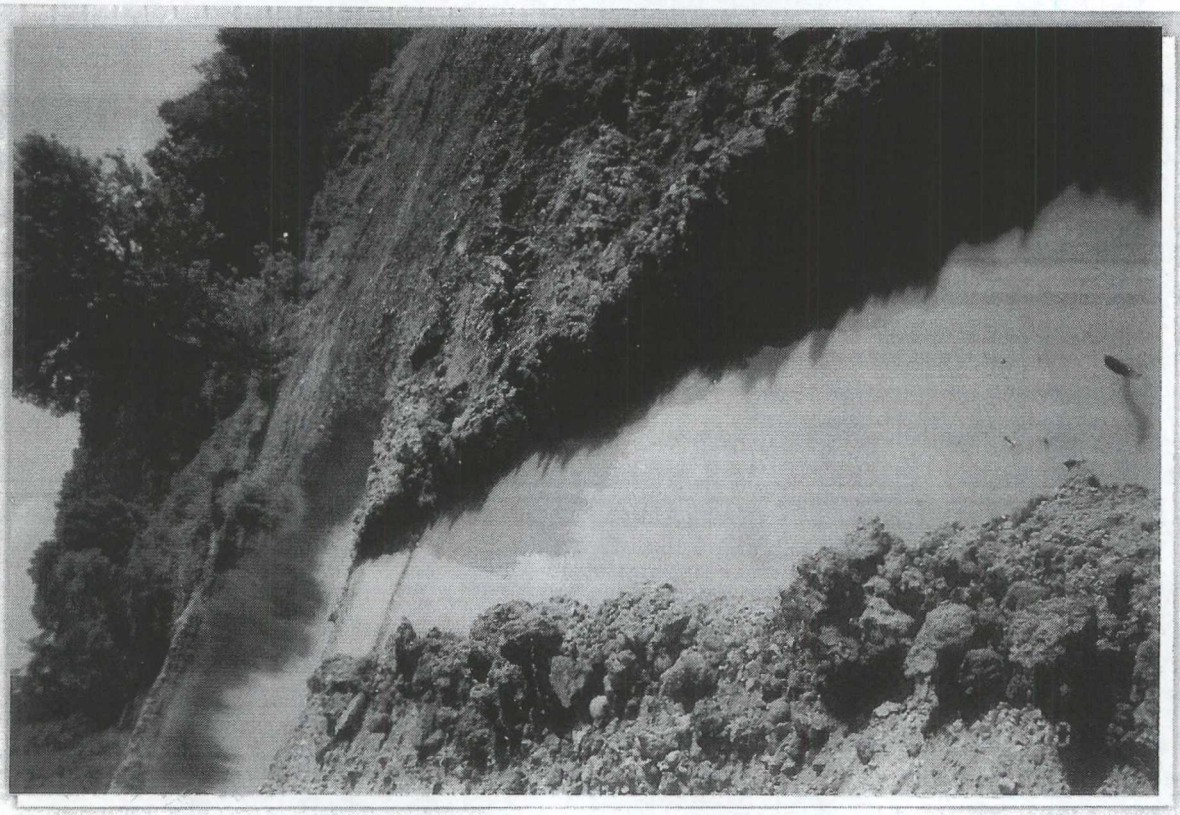
Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 45
Date: May 22, 2000 **Direction:** East **Photographer:** K. Smith
Description: This photograph shows ERRS conducting confined space entry in order to decontaminate on site 20,000-gallon tanks prior to demobilization.



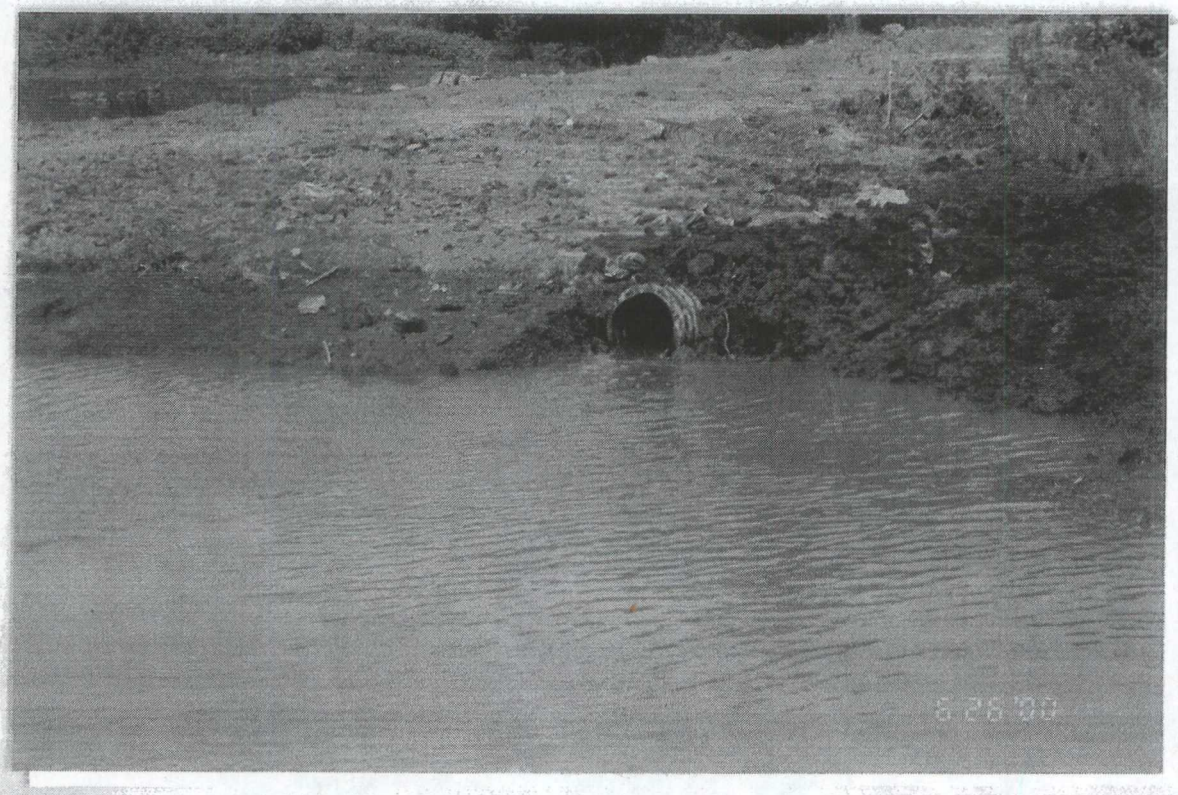
Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 46
Date: May 22, 2000 **Direction:** East **Photographer:** K. Smith
Description: This photograph shows the inside of a decontaminated 20,000-gallon tank awaiting demobilization.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 47
Date: May 25, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows the roll-off box utilized to transport solid waste off site for final disposal.

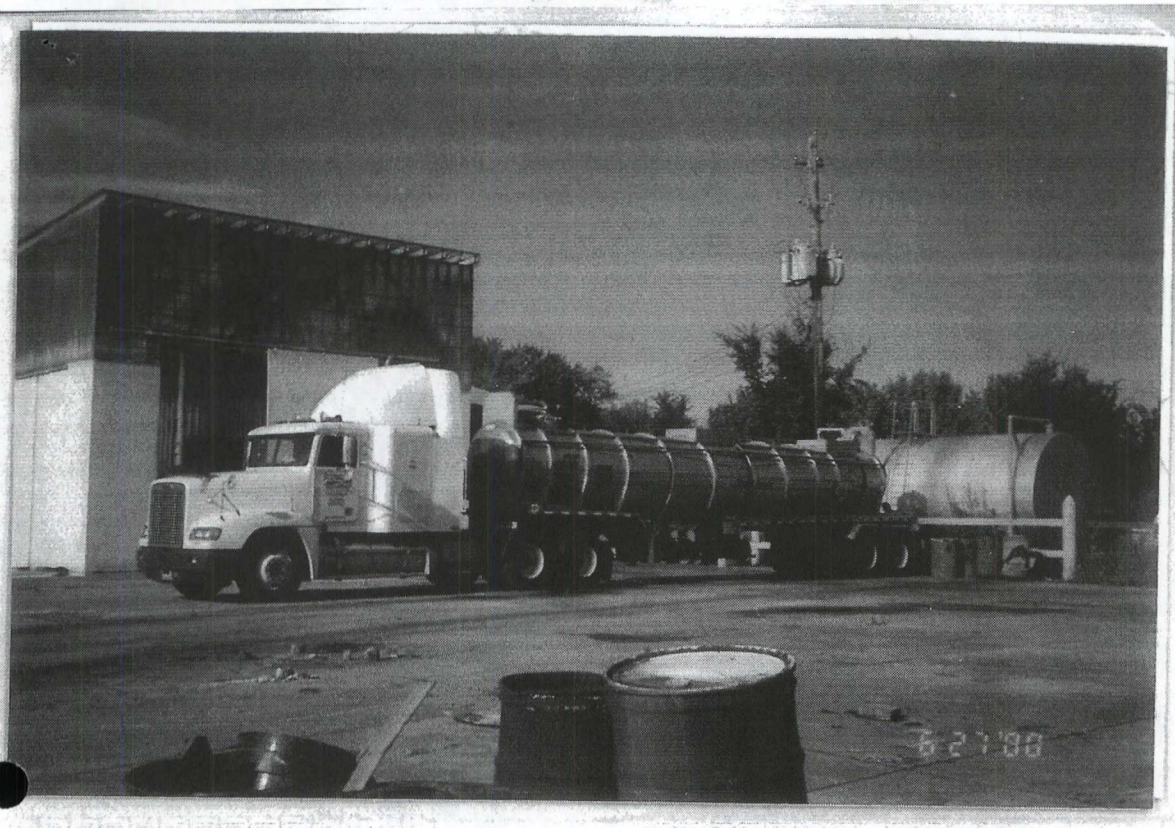
Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 48
Date: May 25, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows the demobilization of a 20,000-gallon tank and ERRS decontaminating the concrete pad.



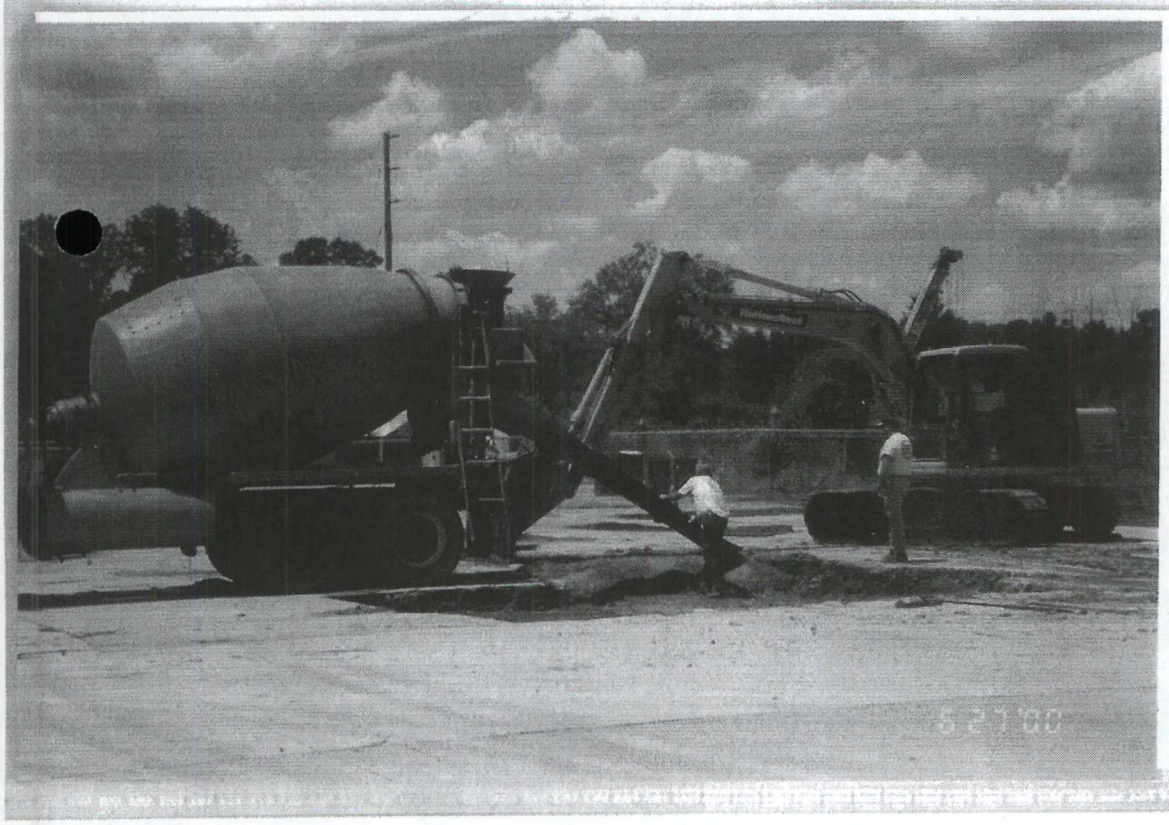
Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 49
Date: June 26, 2000 **Direction:** Northeast **Photographer:** A. Busher
Description: This photograph shows reestablished drainage in the excavated areas.



Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 50
Date: June 26, 2000 **Direction:** East **Photographer:** A. Busher
Description: This photograph shows reestablished drainage in the excavated areas.



Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 51
Date: June 27, 2000 **Direction:** West **Photographer:** K. Smith
Description: This photograph shows the tanker utilized to transport hazardous liquid, removed for the on-site above ground storage tan, off site for final disposal.



Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 52
Date: June 27, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows repairs being done to concrete damaged during removal activities.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 53
Date: June 27, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows the repaired concrete, which was damaged during removal activities.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 54
Date: June 28, 2000 **Direction:** South **Photographer:** K. Smith
Description: This photograph shows reestablished drainage in the excavated areas.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 55
Date: June 29, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows the excavated areas after final restoration.

Site: Windham Alloys Site **TDD:** S05-0003-011 **PAN:** 0M1101RAXX **Photo:** 56
Date: June 29, 2000 **Direction:** North **Photographer:** K. Smith
Description: This photograph shows the excavated areas after final restoration.